Traffic and Air Quality report for Barlow Hall Primary School, Darley Avenue

May 2021

Monthly transport figures for Darley Avenue

Transport figures for Darley Avenue

Created with Datawrapper

Cars on Darley Avenue[1] Headline information

With Barlow Moor Road being reopened after its resurfacing during April, we have seen a noticeable drop in the number of vehicles on Darley Avenue.

The total number of cars on Darley Avenue this month was **22952**, which is **down 56%** from last month.

The busiest day for cars was **Tuesday 18 May** with **1087** cars recorded.

The quietest day for cars was **Monday 3 May** with **445** cars recorded.

The average morning peak hour for cars was **08:00-09:00.** The average afternoon peak hour was **15:00-16:00.**

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[1] **Source:** Telraam.net **please note that all figures are indicative only and may vary up to 10%. Figures for pedestrians do not distinguish between individuals and groups - i.e a group of 3 people walking together will be counted as 1. For a more detailed break down visit **http://bit.ly/DarleyAveDashboard_May** or **http://bit.ly/DarleyAveReport_May**.

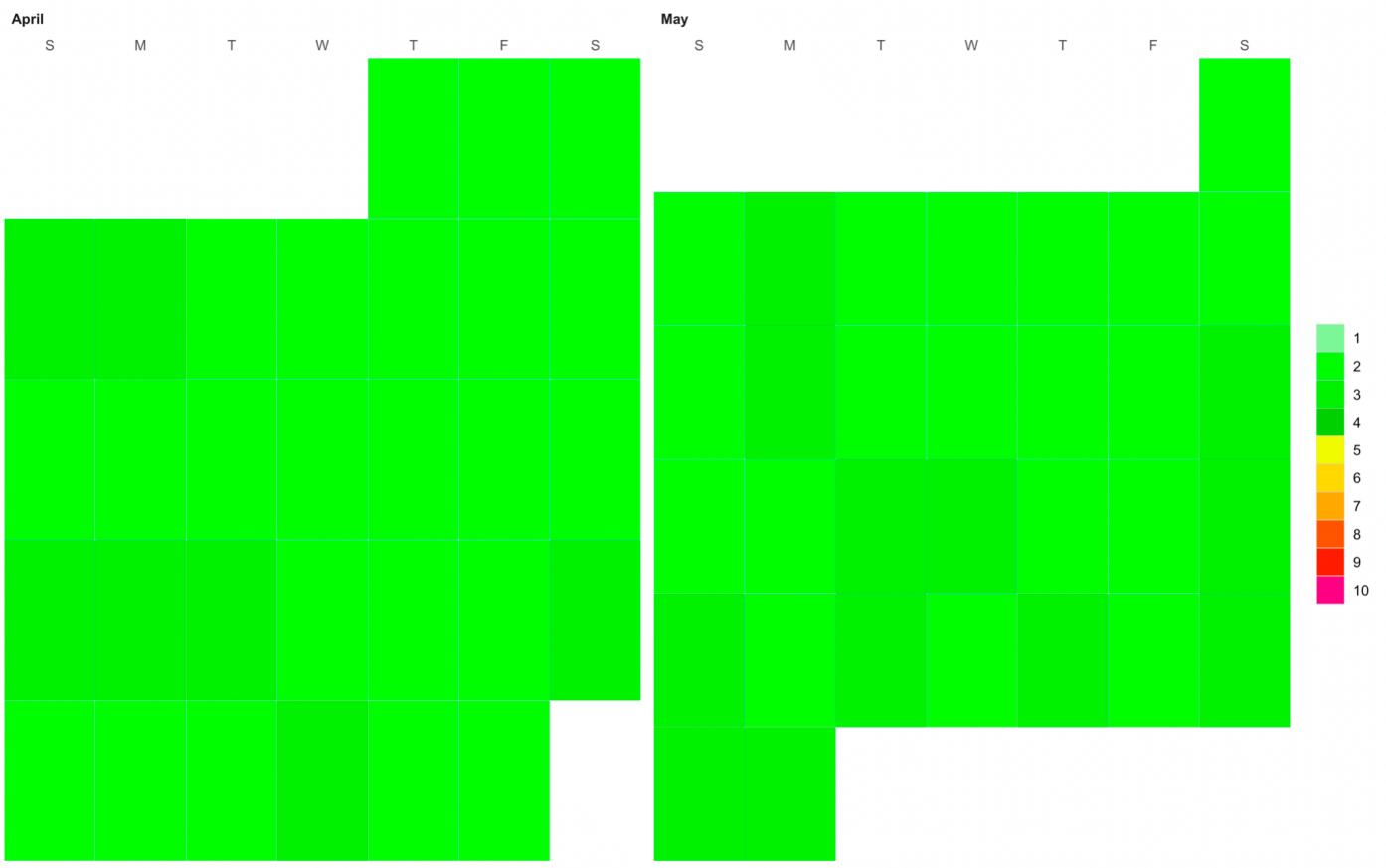
Air Quality & Pollution Readings - Headline information

Pollution levels throughout **May** were **Low**.

19 days registered Level 2 on the Air Quality Index, with **12 registering Level 3.**

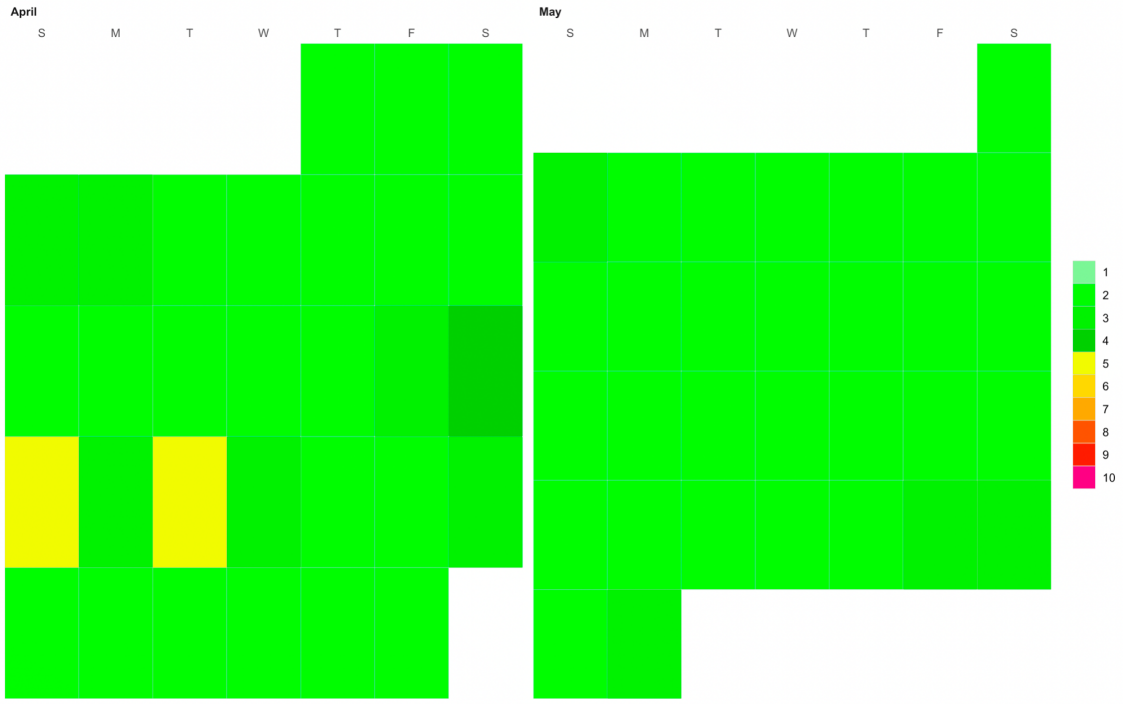
There were **5 more days on Level 3 than in April**.

Air Quality Index Table[2]



[2] Source: The index is made up of readings taken from an EarthSense Zephr air quality monitor installed on Darley Avenue. The index is worked out by measuring Nitrogen Monoxide (NO), Nitrogen Dioxide (NO2), Ozone (O3) and Particulate Matters (PM1, PM2.5 & PM10). We then used DEFRA's Daily Air Quality Index to determine the result and scale.

Four Banks:

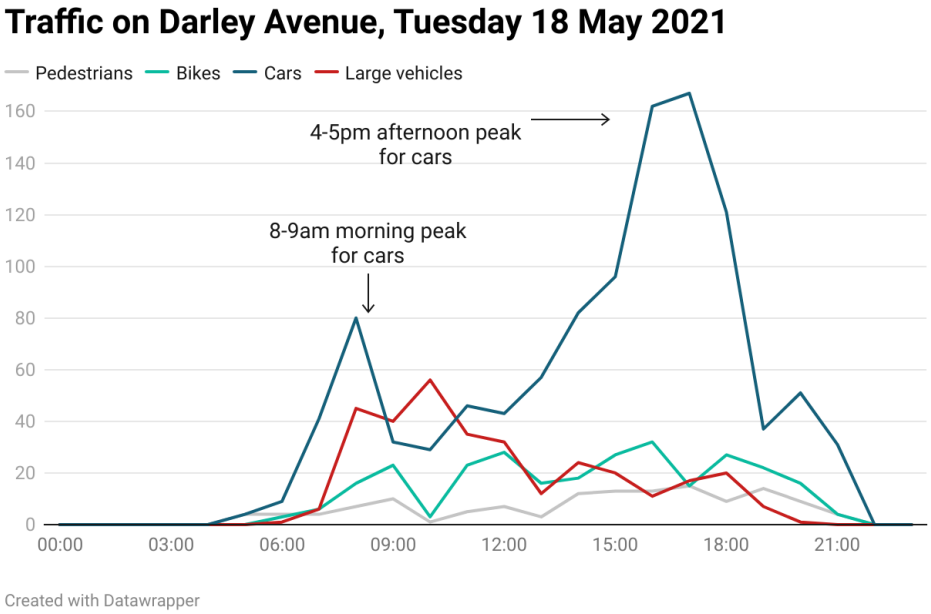


Air Quality Index scale[3]

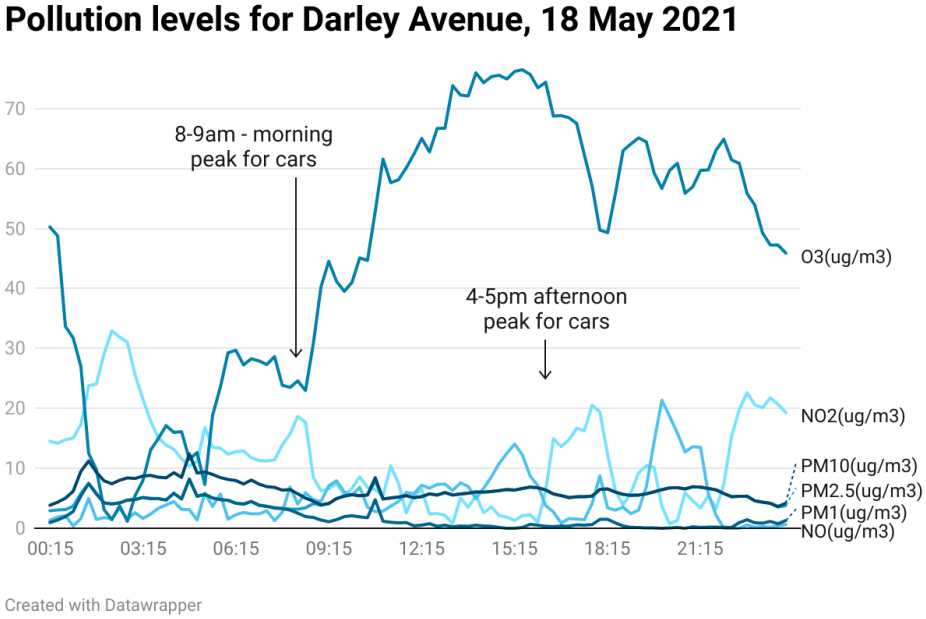
1	**Low**	Enjoy your usual activities
2		
3		
4	**Moderate**	Adults and children with lung problems, and adults with heart problems, who experience symptoms, should consider reducing strenuous physical activity, particularly outdoors.
5		
6		
7	**High**	Adults and children with lung problems, and adults with heart problems, should **reduce** strenuous physical exertion, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also **reduce** physical exertion.
8		
9		
10	**Very high**	Adults and children with lung problems, adults with heart problems, and older people, should **avoid** strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.

[3] Source: https://uk-air.defra.gov.uk/air-pollution/daqi

On Tuesday 18 May 2021 we recorded the most number of cars on Darley Avenue with peaks at 8-9am and 4-5pm.



If we look at pollution levels for this time, we can see spikes in pollutants at this time. We also see an increase in ozone (O3) and a drop in nitrogen dioxide (NO2) during the daytime. This is most likely due to natural sunlight breaking nitrogen down into ozone.

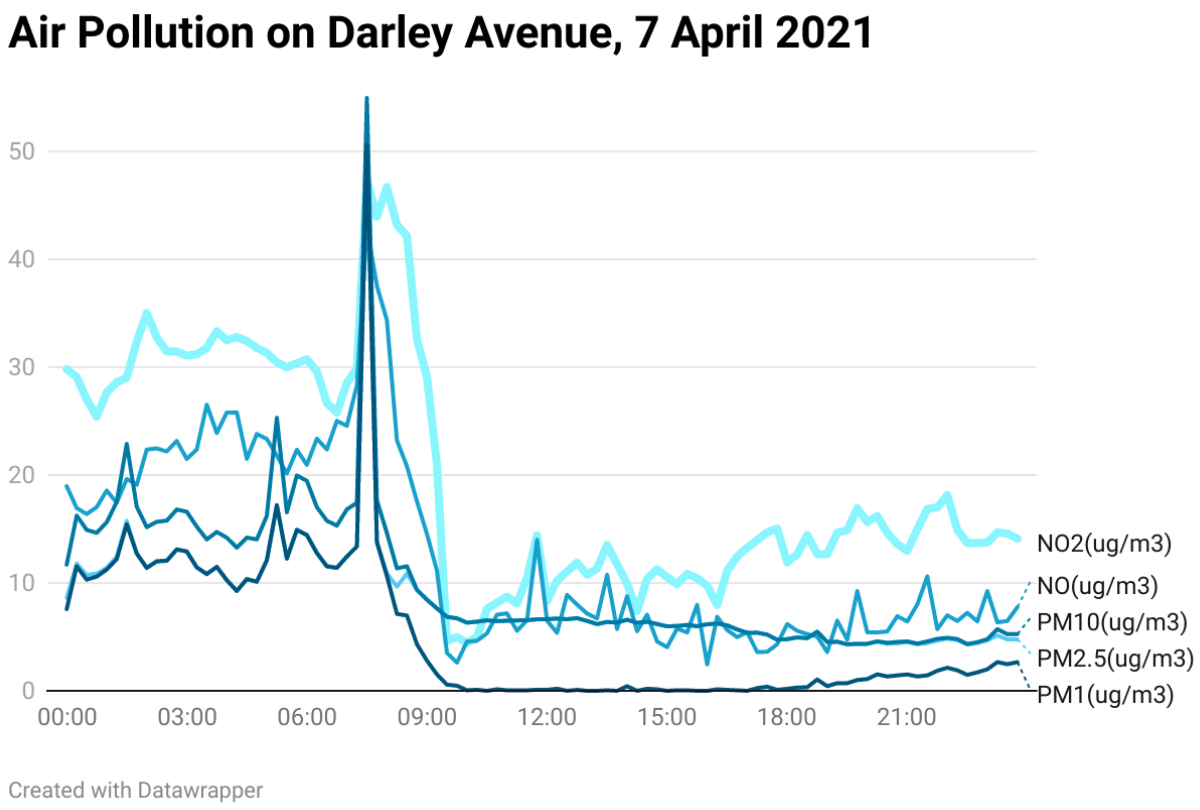


About Air Quality and Car Usage

It's difficult to show a direct link between car usage and air quality because many factors come into play, including temperature, the weather and other environmental conditions. Cars are also not the only cause of such pollutants.

However, we are able to illustrate some short-term effects on a very localised level. The graph below shows pollution levels on Darley Avenue on 7 April 2021, which is when the first in-person traffic survey was carried out.

At 7.30am you can see a spike in NO and NO2, and levels of Particulate Matter (PM). From being onsite, we were able to observe a car idling its engine on the roadside at this time. We can see similar spikes on Darley Avenue, particularly in the morning around 8-9am, which is also the average morning peak for car traffic at this time.



However, it is worth noting that we do not always see the same spikes in the afternoon peak and are recording overnight peaks too. Again, this could be due to a number of environmental or behavioural factors, such as different vehicle types or home heating, weather conditions etc.

Glossary and other useful information

AQI - **Air quality index**. This tells you levels of air pollution and can provide recommendations about actions and health advice. There are various indexes available but in the UK the most common used is the Defra Daily Air Quality Index.

The index is based on concentrations of various pollutants, which are broken down into various index levels, like in the table below[4]. Different averaging periods are given depending on the pollutant. The overall index given is whichever is highest level.[5]

Index	Ozone, Running 8 hourly mean ($\mu g/m^3$)	Nitrogen Dioxide, Hourly mean ($\mu g/m^3$)	Sulphur Dioxide, 15 minute mean ($\mu g/m^3$)	$PM_{2.5}$ Particles, 24 hour mean ($\mu g/m^3$)	PM_{10} Particles, 24 hour mean ($\mu g/m^3$)
1	0–33	0–67	0–88	0–11	0–16
2	34–66	68–134	89–177	12–23	17–33
3	67–100	135–200	178–266	24–35	34–50
4	101–120	201–267	267–354	36–41	51–58
5	121–140	268–334	355–443	42–47	59–66
6	141–160	335–400	444–532	48–53	67–75
7	161–187	401–467	533–710	54–58	76–83
8	188-213	468–534	711–887	59–64	84–91
9	214–240	535–600	888–1064	65–70	92–100
10	≥ 241	≥ 601	≥ 1065	≥ 71	≥ 101

µm - micrometre. Measurements for the various air pollutants are given in micrometres (µm). 1µm = 0.001mm.

NO - Nitrogen Monoxide or **Nitric Oxide.** A colourless gas, Is not considered hazardous to health at ambient temperature.

NO2 - Nitrogen Dioxide - a reddish, brown gas, considered a primary air pollutant. In sunny, dry conditions, NO2 can break down and release an oxygen ion and cause an increase in ozone (O3).

O3 - Ozone - considers a secondary pollutant. At ground level, ozone can contribute to respiratory problems.[6]

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[4] Unlike what is shown in the table, we are not measuring sulphur dioxide.
[5] Source: https://uk-air.defra.gov.uk/air-pollution/daqi
[6] Source: https://www.aeroqual.com/ozone-pollution-problem

Particulate Matter (PM)[7] - describes the mixture of liquid and solids found in the air, such as dust or ash. PM measurements are given based on the diameter or width of the particle.

PM1 - means the mass per cubic metre of air with particles of a diameter less that 1 micrometres (µm)

PM2.5 - means the mass per cubic metre of air with particles of a diameter less than 2.5 micrometres (µm)

PM10 - means the mass per cubic metre of air with particles of a diameter less than 10. micrometres (µm)

[7] https://laqm.defra.gov.uk/public-health/pm25.html